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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,294	03/29/2001	Yasuo Sasaki	057482/0140	6586
22428	7596	01/23/2004		
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007				
EXAMINER COLE, ELIZABETH M				
ART UNIT 1771		PAPER NUMBER		

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/806,294

Applicant(s)

SASAKI ET AL.

Examiner

Elizabeth M Cole

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other _____

1. With regard to Applicant's statement regarding the documents listed in the search report not having been indicated as considered by the examiner, it is noted that both references cited on the search report were included on the 1449 which was attached to the Office Action mailed 8/14/02. The IDS indicated that documents A1 and A2 corresponded to the documents listed in the search report. The 1449 was initialed and signed by the examiner. By initialing and signing the 1449, the examiner has indicated that those references were considered in August of 2002.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '626 in view of Sasaki et al as applied to claims above, and further in view of Tsuchiya et al, U.S. Patent No. 5,773,625. JP 08-197,626 teaches a sheet which comprises at least two layers of unidirectional fiber bundles wherein the direction of the bundles of the first layer is at right angles to the direction of the bundles of the second layer. A third layer at an angle to the second may be added. See page 5 of detail description paragraph 0060 and the section entitled operation. The bundles comprise thermoplastic resin powder which is attached to the bundles and which serves to bond the layers of the sheet together. JP 08-197,626 further discloses the claimed method of applying thermoplastic resin powder to the parallel fiber bundles, stacking the bundles and heating and pressing to form a bonded sheet. See page 4 of the Detailed Description, paragraph 0051-0052. JP '626 does not teach arranging the fibers of the reinforcing

layers at oblique angles. Sasaki et al teaches applying reinforcing fibers at oblique angles in order to improve the structural strength and dimensional stability. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have arranged the reinforcing fibers of JP '626 at oblique angles as taught by Sasaki in order to improve the structural strength and dimension stability of the material.

Neither JP '626 nor Sasaki et al teaches further incorporating thermoplastic fibers which are aligned in the direction of the fiber bundles. Tsuchiya et al teaches that additional thermoplastic fibers may be incorporated with unidirectional fiber sheets. Although Tsuchiya et al is primarily drawn to sheets wherein the additional thermoplastic fibers are not oriented in a particular direction, Tsuchiya does teach that such sheets are known, see col. 1, lines 51-58. Such sheets have more strength in the direction of orientation than in the transverse direction. It would have been obvious to have employed unidirectionally oriented thermoplastic fibers with the unidirectional bundles of JP '626. One of ordinary skill in the art would have been motivated to include such fibers by the teaching of Tsuchiya et al that these fibers enhance the strength of the unidirectional sheet. Since JP '626 solves the problem of strength in the direction transverse to the orientation of the fibers by forming multiple layers which are oriented at angles to each other, the problems which Tsuchiya et al discuss related to the unidirectional orientation of the thermoplastic fibers would not negate the significance of the teaching of Tsuchiya et al for JP '626, especially since Tsuchiya et al teaches that the thermoplastic fibers will naturally align themselves during production, which would result in a simple and easy method of production.

Applicant's arguments filed 11/10/03 have been fully considered but they are not persuasive. In response to applicant's arguments against the references individually,

one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Thus, although it is true that JP '626 and Sasaki do not teach the use of thermoplastic fiber, the references were not relied on for that teaching. Similarly, with regard to Tsuchiya, although it is true the Tsuchiya does not teach each step of the claimed method, Sasaki teaches the claimed method except for the differences noted above. Also, with regard to Tsuchiya, although the majority of the reference is directed to an embodiment wherein the thermoplastic fibers are not aligned in the direction of the other fibers, Tsuchiya clearly teaches that such fabrics are known and that such fibers would necessarily result from the natural orientation of the fibers which occurs during production.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

Mr. Terrel Morris, the examiner's supervisor, may be reached at (571) 272-1478.

Inquiries of a general nature may be directed to the Group Receptionist whose telephone number is (571) 272-0994.

The fax number for all official faxes is (703) 872-9306.



Elizabeth M. Cole
Primary Examiner
Art Unit 1771

e.m.c